

**ABSTRACT**

A device and method are described for the delivery of cells, tissues, enzymes and/or pharmacological agents for the treatment or prevention of diseases, disorders or deficiencies. The device is placed intravascularly and includes a chamber that houses living cells delimited by a membrane on either side that physically separates the cells from the blood stream and the central lumen of the catheter. The device can be inserted over a guidewire and permits flushing and reloading of the central lumen with viability supporting factors that sustain the cells in the outer chamber for long indwelling times without removing it from the body. In addition, the central lumen can be used to deliver therapeutic substances or withdraw blood. The new intravascular catheter can be used for the treatment or prevention of a variety of diseases and disorders, that may use the implantation of living cells, tissues, enzymes or pharmacological agents or for use, for example, for non-therapeutic purposes that may involve sustained intravascular release of biological factors as, for example, in stimulating growth of farm animals to augment the production of meat.